



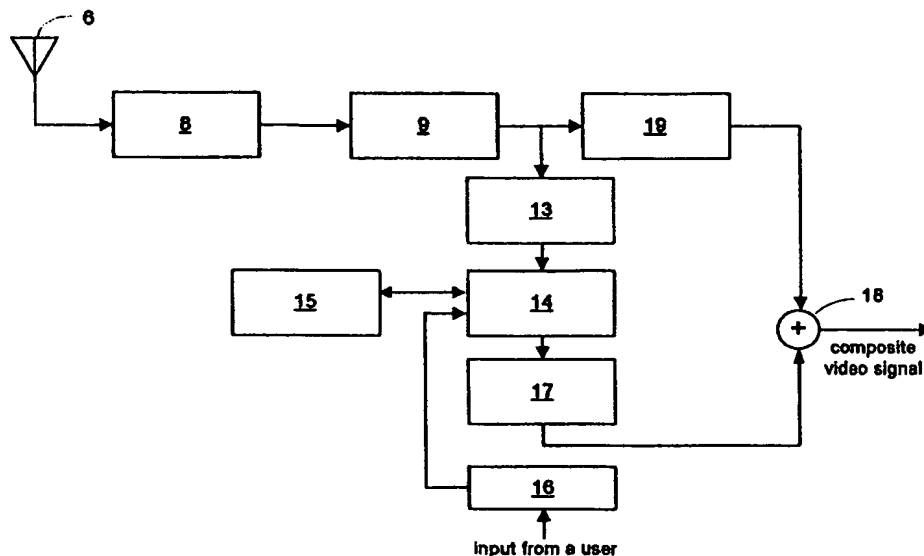
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(54) Title: A LOCAL-AREA INFORMATION OFFERING SYSTEM AND A LOCAL-AREA INFORMATION RECEIVER FOR THE SYSTEM

**(57) Abstract**

The present invention relates to delivery a local-area information such as cultural activities, educational activities, public notice, etc., providing a local-area information receiver and an overall local-area information offering system based on the receiver. The local-area information offering system stores a variety of local-area information received from various local-area information providers. The transmission are tagged with corresponding local-area identification code; to the receivers, making it possible for the receiver to receive selectively and save only local-area information about the local area where the receiver is located or where the receiver is being carried by a user. It also retrieves information about the local area at any time a user wishes.

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DESCRIPTION

A LOCAL-AREA INFORMATION OFFERING SYSTEM AND A LOCAL-AREA INFORMATION RECEIVER FOR THE SYSTEM

1. Technical Field

5 The present invention relates to a local-area information receiver and an overall local-area information offering system based on the receiver. More specifically, it relates to a local-area information receiver and a local-area information offering system, which use the receiver, stores a variety of
10 local-area information received from various local-area information providers. Transmission are tagged with corresponding local-area identification code; to the receivers, making it possible for the receiver to receive and save only local-area information about the local area where the receiver
15 is located and to retrieve information desired by a user. The local-area information receiver automatically tunes the broadcasting frequency of local-area information about the local area recognized by an adopted global positioning system when the user is mobile in and across local areas. Furthermore,
20 the user's convenience at retrieving stored local information about a particular local area (after storing local information about a particular local area and about other local areas) into two separate sections. The present invention enables local residents to obtain, readily and rapidly, local-area
25 information offered by various organizations such as self-governing bodies.

2. Background Art

Current conventional methods for provincial self-administration organizations to provide local residents with
30 information have been ununified. Usual ways of offering local-area information such as public notices, enlightenment, and

advertisements are published pamphlets and booklets which are distributed periodically or the broadcast by vehicle voice recordings. These methods are so slow in delivery, limited and may even cause some inconveniences to local residents due to
5 annoying noise.

In some areas, the method which provides local-area information in captioned text only for subscribers of wire broadcasting systems was used. In this case, the residents of that area should subscribe and watch the wire broadcasting
10 program at all times to get the information. Moreover, if the residents do not concentrate on watching the wire broadcasting program, then they have limited chances to get the information because the captioned local-area information only temporarily appears on the TV screen. Therefore, they have to watch TV
15 continuously in order to acquire the information.

In addition, the local-area information contained in captioned text by the wire broadcasting system is not stored, therefore residents cannot peruse the information at the time when the information such as an advance notice of power failure
20 is necessary. Moreover, local residents cannot gain selectively the information about the other areas because the service offered by the above explained kinds of methods is usually confined to the corresponding local area. The subscribers of the wire broadcasting sometimes have to endure inconveniences
25 which wastes the customer's time such as visiting the district office and searching for an official gazette in order to information about other local areas.

3. Disclosure of Invention

Accordingly, one of the main objects for the present
30 invention is to provide an efficient local-area information offering system which handles a lot of local-area information provided in electronic data by many information providers. It also aims to allow the user, through the use of the receiver, to retrieve particular local-area information at the user's
35 convenience after storing a variety of local-area information

selectively,

It is another object of the present invention are as follows:
to provide a local-area information receiver which provides
users with particular local-area information to be selected
5 among information of all the local areas that is received
through the transmission frequency band identical to that of
the conventional TV broadcasting system or that are received
through the wire communication network.

It is still another object of the present invention to
10 provide local-area information receivers which accept and store
the local information about the local area in which the user is
present by identifying the local area automatically when the
user moves from a area to area.

It is still another object of the present invention to
15 provide local-area information receivers which minimize power
consumption in order to lengthen operation time after only one
charge;

It is still another object of the present invention to
provide local-area information receivers which preserve the
20 received local-area information about a particular local area
where the user primarily resides, which is protected from
local-area information about any other local areas to be
received while the user is mobile.

It is still another object of the present invention to
25 provide local-area information receivers which automatically
find the frequency band assigned to the current local areas,
thereby eliminating manual tuning when frequency bands for
broadcasting of local-area information are different among
local areas.

30 Additional features and advantages of the invention will be
set forth in the following description, and in part will be
apparent from the description, or may be learned by practice of
the invention. The objective and other advantages of the
invention will be realized and attained from the structure
35 particularly pointed out in the written description and claims

hereof, as well as from the appended drawings.

To achieve the above objectives, a local-area information offering system according to the present invention is characterized in that the system is comprised of a data communication network for exchanging data; many local-area information providers for providing their own local-area information, which are connected to a data communication network; a local-area information distributor, connected to the data communication network, which stores all of the local-area information provided by many local-area information providers, and transmits each of the local information tagged with the pre-assigned area identification code; and local-area information receivers which receive the local-area information via the local-area information distributor only when the area identification code contained in the information is equal to the its pre-set local-area code. The present invention is also characterized by the local-area information distributor which uses radio frequencies for transmitting all of the local-area information offered by the local-area information providers and that the local-area information receiver accepts local information about a particular local area by checking accordance between both local-area codes.

The local-area information receiver according to the present invention is characterized in that it comprises a tuning means which tunes the high-frequency signals which contain local-area information and demodulate the tuned signal; a decoding means which extracts the digital data by decoding the demodulated signal; an inputting means with which the user inputs the assigned local-area code; a discriminating means which detects the area identification code in the extracted data and checks whether or not the detected area identification code is equal to the pre-set local-area code; a storing means which stores extracted data only when both codes match each other; a character signal generating means which transforms the stored data into the corresponding character signal; and an adding

means which adds the character signal to a demodulated broadcasting video signal.

The local-area information receiver according to the present invention is also characterized in that it comprises an
5 inputting means with which the user inputs the assigned local-area code; a communicating means which receives the data containing the local-area information; a discriminating means which detects the area identification code in the received data and confirms the accordance between the detected area
10 identification code and the pre-set area code; a storing means which stores the data when both codes match each other; and a displaying means which displays the stored data.

In addition, the local-area information receiver according to the present invention is characterized in that it comprises a
15 tuning means which tunes the high frequency signal containing the local information and demodulates the tuned signal; a decoding means which extracts the data by decoding the demodulated signal; a position identifying means which identifies the current location of the receiver by calculating
20 some coordination values from satellites; a discriminating means which detects the area identification code in the extracted data and confirms that the detected area identification code accords to the area code corresponding to the current location identified by the position identifying
25 means; a storing means which stores the data when both codes match each other; a character signal generating means which transforms the stored data into character displaying signal; a displaying means which displays the characters by using the character displaying signal.

30 The local-area information receiver according to the present invention is also characterized in that it is further comprising a timer which tracks and maintains the current time; and a power controlling means which controls the power supplied to the tuning means, the decoding means, and the position
35 identifying means either at predetermined time periods or at

fixed time zone during the day.

The local-area information receiver according to the present invention is also characterized in that the storing means stores the local information about a particular local area and
5 the other local areas into memory separately.

The local-area information receiver according to the present invention is also characterized in that it is further comprising a frequency band memorizing means which memorizes differently allocated frequency bands, which are used by the RF
10 signal carrying the local-area information, according to each of local areas; and a frequency band varying means which reads the frequency band allocated to the current local area identified by the position identifying means out of the frequency band memorizing means, and tunes the frequency band
15 of the tuning means to the chosen frequency band.

In the local-area information offering system and the local-area information receiver configured as described above, all of the local-area information of each of local areas for enlightenment, publication or public notice offered by many
20 local-area information providers connected to the data communication network are transmitted to the local-area information distributor. And then, all of the local-area information are stored into their separate storage spaces of the local-area information distributor by decoding the
25 identification code, which agreed between the providers and the distributor.

The local-area information distributor transmits local-area information tagged with its own area identification code to all the local-area information receivers. The tuning means of each
30 of the receivers tunes to the high-frequency bands in which the local-area information broadcasts and demodulates the tuned signal; then, the decoding means of the receiver extracts the local-area information data transmitted by the distributor. The discriminating means of the receiver checks whether or not the
35 area identification code within the extracted data is in

accordance with the area code that the user set with the inputting means. If both codes are confirmed as identical, it stores in the storing means. Therefore, local-area information about particular local area can be stored exclusively.

5 The character signal generating means converts the stored local-area information into a video signal that can be seen as characters if combined with the demodulated TV signal obtained from the other processing, and then the converted video signal is fed to the adding means which adds the character signal to
10 the demodulated TV signal. Therefore, local-area residents can see the local-area information while watching TV.

The local-area information distributor that receives all of the local information about all local areas in the same way described above, also broadcasts the information tagged with
15 the pre-assigned area identification code through the data communication network. The broadcasting local information is received by the communicating means of all the local-area information receiver, and then fed to the discriminating means. The discriminating means checks whether or not the area
20 identification code in the received data is in accordance with the area code set by the user through the inputting means, and then confirms the accordance of both identification codes. Only when both codes are identical, the received local-area information is stored in the storing means, thereby making it
25 possible to selectively receive information about the particular local area the user specified. Whenever requested by the user, the stored local-area information can be retrieved from the storing means and then seen by the user through the displaying means.

30 A portable type of local-area information receiver has a built-in position identifying means for recognizing the current location where the user is present based on coordination values obtained from RF signals containing position data of a few satellites. The computed current location is fed to the
35 discriminating means for retrieving the local-area code using

the pre-memorized relation between position values and local areas.

The tuning means tunes to the high-frequency signal in which the local-area information is contained and demodulates the
5 tuned signal. Similarly, a decoding means extracts the digital data by decoding the demodulated signal. Both the digital data and the retrieved local-area code of the current local area are fed to the discriminating means to receive only the local-area information about the current local area, enabling the local-
10 area information about the current local area to be stored automatically without external setting for the current location by the user.

The character signal generating means converts the stored local-area information into a character displaying signal that
15 can be seen when it is fed through the displaying means.

If the local-area information is offered at predetermined time periods or at fixed time zones during the day, the current time kept in the timer is fed to the power controlling means that decides whether or not the current time falls into the
20 time zone or time periods. Supplying power is supplied to both the tuning means and the position identifying means if the condition is satisfied so that the local-area information receiver stores the local-area information that the users want to obtain. When the current time of the timer does not belong
25 to the time zone or time periods any more, the power controlling means cuts off the power to the tuning means and position identifying means, resulting in the reduction of unnecessary power usage.

Furthermore, with pre-setting a particular local-area code,
30 the storing means protects the information about the local area corresponding to the pre-set local-area code by ensuring that the local-area information about other local areas is stored into a section of bi-sectional storage space. Even when the user goes in a local area whose frequency band differs from
35 that of adjacent local areas, the frequency band value

corresponding to the current local area that is retrieved from the frequency band memorizing means is fed to the frequency band varying means. Then, the frequency band varying means varies the tuning frequency band of the tuning means so that
5 the user can obtain local-area information irrespective to differently allocated frequency bands of local areas.

The local-area information offering system and the local-area information receiver, according to the present invention configured and operated as described above, make it possible to
10 offer the local-area information provided by many local-area information providers rapidly and reliably and to reduce difficulties or wasting time in obtaining information. Accordingly, it is possible to remove noise or environmental pollution by such a gazette thrown away that is induced by
15 traditional methods for offering public notice or public announcement. In addition, the local-area information offering system and the local-area information receiver enable the user to receive the local-area information about the local area in which the user is at present by automatically locating the
20 current location even without knowing the corresponding local-area code, which eliminates the time and process required for the user's adaptation to a local area.

Furthermore, usage of different storage spaces according to whether or not the received information is concerned with the
25 specific area, while moving around other areas, allows the user to preserve the local information about the specific area, which might be the area where the user lives, that otherwise are lost by the other local-area information received during movement.

30 The local-area information receiver is also capable of reducing power consumption by only supplying power to devices for receiving local-area information only at the service time, thereby lengthening its operation time after only being charged once.

35 It is to be understood that both the foregoing general

description and the following detailed description are provided for exemplary and explanatory purposes only and intended to provide further explanation of the invention .

4. Brief Description of Drawings

5 The accompanying drawings, which are included to provide a further understanding of the invention, illustrate a preferred embodiment of this invention, and together with the description serve to explain the principles of the present invention.

In the drawings:

10 FIG. 1 shows a preferred embodiment of a local-area information offering system according to the present invention;

FIG. 2 shows a preferred embodiment of a local-area information receiver of FIG. 1;

FIG. 3 shows another embodiment of a local-area information
15 receiver of FIG. 1;

FIG. 4 shows another embodiment of a local-area information offering system according to the present invention;

FIG. 5 shows a preferred embodiment of a local-area information receiver of FIG. 4;

20 FIG. 6 shows another embodiment of a local-area information receiver according to the present invention; and

FIG. 7 shows an illustration of zip-codes as a candidate of local-area identification code.

5. Modes for Carrying out the Invention

25 The configuration and operation of preferred embodiments of the present invention will now be explained in detail with reference to the accompanying drawings.

FIG. 1 shows a preferred embodiment of the local-area information offering system according to the present invention
30 which uses a radio signal for the transmission of local-area information to residents in local areas. It is made of a data communication network 10 which includes exchangers 5 for exchanging data; one or more local-area information providers 1 connected to network 10, which provide local-area information
-35 data; a local-area information distributor 2, which stores the

data received from all of the local-area information providers
1 at their own storage spaces after identifying the
identification code contained in the data; and local-area
information receivers 3 which individually receive information
5 about their own local area among all of the transmitted local-
area information by checking the local-area identification code
contained in the data.

FIG. 2 shows a preferred embodiment of local-area information
receiver 3 of FIG. 1, which is suitable for the case that the
10 local-area information is transmitted with the existing TV
broadcasting signal, comprising a tuner 8 which tunes the aimed
signal band from the signal received by antenna 6; a
demodulator 9 which demodulates the tuned signal into the
original digital signal; a video signal transformer 19 which
15 extracts a video data from the demodulated digital signal and
converts it into an analog signal; a decoder 13 which extracts
local-area information data out of the demodulated digital
signal; a memory 15 for storing local-area information; a data
input device 16 with which the user inputs data; a controller
20 14 which checks whether or not the local-area code set by the
user through the input device 16 accords to the area
identification code contained in the data extracted by decoder
13 and stores the information about the local area
corresponding to the set local-area code into memory 15; a
25 character signal converter 17 which transforms the character
data stored in memory 15 into the character displaying signal
by control of controller 14 ; and an adder 18 which adds the
character displaying signal to video signal outputted from the
video signal transformer 19.

30 Tagged with the address on the network 10 of the local-area
information distributor 2, a variety of local-area information
(cultural activities, educational activities, public notice,
etc.) about local areas covered by a local-area information
provider is transmitted to the local area information
35 distributor 2 through data communication network 10. A code

prescribed between local-area information provider 1 and the local area information distributor 2 is also transmitted with the local-area information, along with attribute data indicating characteristics of the information such as how
5 urgent it is and how often it should be offered. Local area information distributor 2 locates the local area to which the received local-area information should be offered by decoding the prescribed code and then stores the information into each storage space allocated for the local area.

10 Local-area information distributor 2 continuously scans the local information stored as described above, modulating the information together with television broadcasting signals into high-frequency signal, and transmits it. The details of offering scheme depends on the data that indicates the
15 characteristics of the local-area information. For example, if the indicator is marked as 'urgent transmission', the corresponding local-area information is transmitted as soon as it is saved; If it is indicated as 'periodic transmission', it is transmitted periodically.

20 If local-area information distributor 2 transmits local-area information along with a local-area identification code indicating the local area targeted by the local information, each local area information receiver 3 stores necessary local-area information among all of the local-area information
25 offered by the local-area information distributor 2. The detailed process is as follows:

Tuner 8 tunes a specific frequency band from the RF signal received by antenna 6, transforming it into an intermediate frequency (IF) signal, and feeds it to demodulator 9.

30 Demodulator 9 demodulates the IF signal and extracts the original digital signal. Because television broadcasting data and information data are mixed in the extracted digital signal, video data in the extracted digital signal is converted into an analog video signal by video signal transformer 19 and is then
35 fed to adder 18 so that the broadcasting signal can be seen on

TV thereafter. In the meantime, decoder 13 draws the data related to local-area information out of the extracted digital signal, outputting valid data to controller 14 after removing incidental data required for synchronization and error correction and so on.

Controller 14 of local-area information receiver 3 continuously checks whether or not the local-area identification code contained in the data from decoder 13 is equal to the area code set by the user through input device 16. If they match each other, controller 14 stores that data into memory 15. Whenever a request of the user occurs through input device 16 or as soon as storage is complete, the stored data related to local-area information is retrieved and then fed to character generator 17. The character signal for the input data produced by character signal converter 17 is fed to adder 18, and is then mixed with the other input video signal to adder 18 so that the user can acquire the aimed local information from the text according to the character signal superimposed with video signals on the screen without being interrupted while watching any TV program.

FIG. 3 shows another embodiment of local-area information receiver 3 of FIG. 1, which receives the local-area information when a radio frequency band that differs from that of an existing TV broadcasting, is used for broadcasting of the local-area information by local-area information distributor 2.

As shown in FIG. 3, receiver 3 comprises a tuner 8' which tunes the aimed signal from the TV broadcasting signal received from antenna 6'; a demodulator 9' which demodulates the video signal out of the tuned TV signal; a RF filtering amplifier 11 which filters and amplifies the high-frequency signal band containing the local-area information from the RF signal received from antenna 7; a demodulator 12 which demodulates the amplified signal; a decoder 13 which decodes the demodulated signal and extracts the valid data required for local-area information; a memory 15, a data input device 16, a controller

14, and a character signal converter 17 whose functions are the same as that of the embodiment of FIG. 2, respectively; and an adder 18 which adds the converted character displaying signal to the video signal demodulated by demodulator 9'.

5 To be more specific, tuner 8' selects the TV broadcasting signal and transforms it into the intermediate frequency (IF) signal which is then fed to demodulator 9'. The TV signal, demodulated by demodulator 9' from the IF signal, is fed to adder 18 so that the user is able to watch the chosen TV
10 channel.

On the other hand, a high-frequency signal that contains local-area information is filtered out of the RF signal received from antenna 7 and amplified by RF filtering amplifier 11, and is then fed to demodulator 12. Demodulator 12
15 demodulates the high-frequency signal into the original digital signal and output it to decoder 13. The same operations as those of the above-mentioned embodiment of FIG. 2 occur thereafter, so that the local-area information is stored into memory 15 by controller 14 and is then retrieved and seen as
20 characters representing local-area information on TV by the operation of character signal converter 17 while the local-area residents watch any TV program.

FIG. 4 shows another embodiment of the local-area information offering system according to the present invention, which
25 provides local-area information through the a wire communication network, comprising a data communication network 10 and numerous local-area information providers 1 which perform the same function as seen in the embodiment of FIG. 1; a local-area information distributor 2 which stores the local-
30 area information provided by local-area information provider 1 and transmits the information through data communication network 10; synchronous local-area information receiver 3', connected to data communication network 10, which receives information, which is tagged with the corresponding local-area
35 identification code for discrimination, about a specified local

area; and a network interfacing device 4 which connects a asynchronous local-area information receiver 3" to the data communication network 10.

FIG. 5 shows the preferred embodiment of the synchronous local-area information receiver 3' of FIG. 4, comprising a memory 50, a data input device 60 which are used for the same function as in the embodiment of FIG. 2; a data receiver 30 which selectively accepts the data from the data communication network 10; a controller 40 which detects the local-area identification code in the data received by data receiver 30 and checks whether it is identical to the pre-set local-area code or not, and stores the local-area information about the local area corresponding to the pre-set area code to memory 50; and a displayer 70 which shows the stored local information through controller 40. In the preferred embodiment of the local-area information offering system and the local-area information receiver according to the present invention configured as described above, the local-area information distributor 2, which receives the local-area information through data communication network 10 in the same way as the embodiment of FIG. 1, transmits the local information tagged with the local-area identification code for its targeted local area through data communication network 10 to local-information receivers 3' and 3".

This transmission is made by designating the Closed Users Group (CUG) or by broadcasting through data communication network 10. If the local-area information that is tagged with the local-area identification code are sent into data communication network 10, all of the local-area information receivers 3' and 3" receive the local information in the form of group message or broadcasting message. The detailed procedure is as follows:

The data receiver 30 decodes the group message or broadcasting message according to the prescribed data communication protocol and transmits it to controller 40;

controller 40 continuously compares the local-area identification code in the received data from data receiver 30 with the pre-set local-area code; the pre-set area code is entered by the user of local-area information receiver 3' through data input device 60 to obtain the information only about the local area corresponding to pre-set local-area code. Only when both codes are confirmed as identical, controller 40 stores the corresponding data into memory 50. Whenever the user requests local information to be displayed or as soon as storing is complete, controller 40 retrieves the data from memory 50 and then transmits them to displayer 70 which converts the received data into corresponding visual signals on its screen, allowing the user to recognize the local-area information.

As shown in Fig. 7, it is preferable to use zip-codes as the local-area identification code when discriminating each local area in the above described embodiment.. The use of zip-code as the local-area identification code makes it more efficient for local-area information to be distributed by local-area information distributor 2 and to be selectively received by local-area information receivers 3, 3', and 3" because a zip-code is already assigned to each small administrative unit such as 'Kuui-dong' (143200), 'Kunja-dong' (143100), etc..

If the information that the local-area information distributor 2 provides is about areas larger than local areas indicated by a zip-code, e.g., state or city, the local-area information distributor 2 transmits the local information tagged with a special area code whose latter three codes are all filled with zero to local-area information receivers 3, 3', and 3". For example, 143000 is used to identify area code targeted for 'Kwangjin-Gu' which is a larger area consisting of 'Kuui-dong', 'Kunja-dong' and so forth. Controller 40 of local-area information receivers 3, 3' and 3" identifies the area codes for the larger area and receives the local information, allowing all residents in the larger local areas to obtain

local information in just one transmission.

In the condition that a place a user primarily lives in differs from the residence on resident registration, when a user tries to get the local-area information such as public
5 notification confined to the local area of resident registration, the user can obtain the local-area information about the area that the user wants at any time by just setting the local-area code of controller 14 and 40 into the area code (zip-code) of the area about which the user wants to get local-
10 area information.

FIG. 6 shows the preferred embodiment of the local-area information receiver according to the present invention which can receive local-area information while the user is mobile . It is composed of a key pad 160 which receives the inputs from
15 the user; an RF variable filtering amplifier 80 which filters and amplifies high-frequency signal belonging to particular frequency band among high-frequency signals received from RF antenna 7 and vary frequency bands; a demodulator 90 which demodulates the amplified signal into the original digital
20 signal; a decoder 100 which extracts data corresponding to the local-area information from the demodulated digital signal; a Global Position System(GPS) 140 which calculates current position values such as latitude, longitude and height by using coordination data received from low-orbit satellites; a battery
25 120 which supplies power to the local-area information receiver; a memory 150 which stores the local information; a Read Only Memory(ROM) 151 which memorizes the local-area code corresponding to the position data calculated by GPS 140 and the frequency band value associated with the local-area code; a
30 controller 110 which identifies the local area identification code in the extracted data, receiving local information only when its local-area code accords to the area code of the current location calculated by GPS 140 and then stores the local-area information into different storage spaces according
35 to whether or not the received local-area information is

related to particular local area that is set to the receiver by the user; a switch 130 which cuts off the power line through controller 110; a character signal converter 110 which transforms local-area information stored in memory 150 into data to be displayed on LCD through the controller 110; an LCD
5 displayer 190 which displays the transformed data; and a timer 170 which maintains the current time.

In the preferred embodiment of the local-area information receiver according to the present invention configured as
10 described above, battery 120 supplies local-area information receivers with power through a power line. IF, however, switch 130 remains open, power is not supplied to the RF variable filtering amplifier 80, demodulator 90, decoder 100, and GPS 140. In this state, the user set the service time into
15 controller 140 by referencing a guidance book about current local area that is published by such a local-area information providing enterprise. For example, if the local-area information provider provides the local-area information for 1 minute at every two hours from 9:00 A.M. (9:00 A.M., 11:00
20 A.M., 1:00 P.M., etc.), the data comprising starting time, 9:00 A.M., service period 2 hours, and service time 1 minute is set.

Along with data related to service time, the local-area code corresponding to a particular local area that the user chooses, e.g., where the user lives , is set to controller 110 through
25 key pad 160.

After such a setting is done, controller 110 continuously reads the current time from timer 170 and checks whether or not the local-area information is available, i.e., the current time is the service start time, e.g., 9:00 A.M. or a little prior to
30 the service start time, e.g., 8:59 A.M. If satisfied, controller 110 turns on switch 130 which activates RF variable filtering amplifier 80, demodulator 90, decoder 100 and GPS 140, causing subsequent operations required to receive local-area information. A more detailed description is given below.

35 First, when the power begins to be supplied through the power

line, GPS 140 calculates the absolute position values of the location of the user's receiver when it is mobile by the principle of trigonometry using coordination data received from four ones of the 24 low-orbit satellites and sends the computed
5 position values to controller 110. Controller 110 then extracts the local-area code corresponding to the position at which the user is after searching the ROM 151 for a sectional range encompassing that position and then retrieves the suitable frequency band value for receiving the local-area information
10 from the ROM 151. Thus, the retrieved frequency band value is one allocated for that local area corresponding to the identified local-area code.

With the retrieved frequency band value, controller 110 changes the tuning band of the RF variable filtering amplifier
15 80 so as to tune and amplify high-frequency signals containing local-area information to be transmitted after a short while.

When high-frequency signals containing local-area information begin to be transmitted at the information service time, the RF variable filtering amplifier 80 filters and amplifies the radio
20 signal of the chosen frequency band out of the RF signal received from RF antenna 7 and outputs the amplified signal to demodulator 90. The original digital signal demodulated from the radio signal of the high-frequency band by demodulator 90 is fed to decoder 100. Decoder 100 decodes the digital signal,
25 extracting the local-area information except for some auxiliary data for synchronization and error correction of them, and sends the extracted local-area information to controller 110.

It is, in general, more economical to assign one frequency band to several adjacent local areas than one frequency band
30 per local area. In this case, after receiving local-area information through the frequency band assigned to the current local area, controller 110 checks whether or not the local-area identification code in the received data is identical to the area code identified by the GPS 140. If both codes are
35 identical, it is further checked by controller 110 whether or

not the area code by GPS 140 accords with the local-area code corresponding to the specific area, such as when Seoul is set as a 'fixed area' by the user through key pad 160. If both of the codes are identical again, the received local-area
5 information is stored in the storage space allocated only for local information about the fixed area, otherwise it is stored in another storage space separated from the storage space for the fixed area. Therefore, this separated storing enables the user to receive renewed information about every non-fixed local
10 area without loss of information about the specific area already stored while freely moving around in local areas other than the specific area.

Furthermore, when returned to the specific area, the user can retrieve, at any time, the local-area information which may
15 have been lost or forgotten by the user.

The stored local-area information is retrieved from memory 150 and is fed to character generator 180 whenever requested by the user or as soon as storage is complete. The local information is transformed into signal for LCD displayer 190 by
20 character signal converter 180 and is then seen by the user in the form of sentences composed of characters.

Once the current time lapses the service time, e.g., 9:01 A.M., or later than the service time, e.g., 9:02 A.M., controller 110 opens switch 130 to cut off the power being
25 supplied to RF variable filtering amplifier 80, demodulator 90, decoder 100 and GPS 140, resulting in a reduction of power consumption. In this state, controller 110 continuously checks the current time from timer 170 for the next service time period, as well as being ready to retrieve local-area
30 information from memory 150.

If local information is provided at a specific time zone, e.g., from 9:30 A.M. to 9:40 A.M., instead of by the periodic service scheme explained above, the user obtains local information as well by setting the service time zone into
35 controller 110. At this time, controller 110 also turns switch

130 on or off according to whether or not the current time from timer 170 belongs to the service time zone.

The foregoing is provided only for the purpose of illustration and explanation of the preferred embodiment of the present invention: therefore, changes, variations and modifications may be made by those skilled in the art without departing from the spirit and scope of the invention.

CLAIMS

1. A local-area information offering system, comprising:
 - a data communication network for exchanging data;
 - one or more local-area information providing means for providing local-area information which are connected to said data communication network;
 - a local-area information distributing means connected to said data communication network, which stores all of the local information provided by said local-area information providing means and transmits the corresponding local information tagged with a pre-assigned area identification code; and
 - a lot of local-area information receiving means for receiving local information transmitted from said local-area information distributing means, of which the area identification code corresponds to a area code set to each of said local-area information receiving means.
2. The local-area information offering system according to claim 1, in which said local-area information distributing means transmits the local-area information along with the television broadcasting signal.
3. The local-area information offering system according to claim 1, in which said local-area information distributing means stores local-area information provided by said local-area information providing means in different storage spaces according to the code prescribed between said local-area information providing means and the local-area information distributing means.
4. The local-area information offering system according to claim 1, in which said area code and said area identification code are the zip-codes.
5. The local-area information offering system according to claim 1, in which said area code and the area identification code are a part of user's address.
6. A local-area information receiver, comprising:

a tuning means for tuning high-frequency signals containing local-area information to demodulate tuned signals;

a decoding means for decoding demodulated signals in order to extract the data;

an inputting means with which a user inputs an area code;

a discriminating means for detecting an area identification code in extracted data which confirms whether or not the detected area identification code is in accordance with the area code set through said inputting means;

a storing means for storing the local-area information in the extracted data after its accordance is confirmed by said discriminating means;

a character signal generating means for transforming stored local-area information into a corresponding character signal to be displayed as characters; and

an adding means for adding a character signal to a demodulated broadcasting TV signal.

7. The local-area information receiver according to claim 6, in which said area code and said area identification code are the zip-codes.

8. The local-area information receiver according to claim 6, in which said area code and said area identification code are a part of user's address.

9. A local-area information receiver, comprising:

an inputting means with which a user inputs a area code;

a receiving means for receiving data containing local-area information;

a discriminating means for detecting the area identification code in the extracted data which checks whether or not the detected area identification code is in accordance with the area code set through said inputting means;

a storing means for storing the local-area information when its accordance is confirmed by said discriminating means; and

a displaying means for displaying stored local-area information.

10. The local-area information receiver according to claim 9, in which said area code and said area identification code are the zip-codes.

11. The local-area information receiver according to claim 9, in which said area code and said area identification code are a part of user's address.

12. A local-area information receiver, comprising:

a tuning means for tuning high-frequency signals containing local-area information in order to demodulate the tuned signal;

a decoding means for decoding demodulated signals in order to extract the data;

a position identifying means for calculating the current location of a receiver using coordinate data from low-orbit satellites;

a discriminating means for detecting an area identification code in extracted data which checks whether or not the detected area identification code is in accordance with the area code corresponding to the current location identified by said position identifying means;

a storing means for storing local-area information in extracted data when the accordance is confirmed by said discriminating means;

a character signal converting means for transforming the stored local-area information into data to be displayed as characters; and

a displaying means for displaying the transformed character data.

13. The local-area information receiver according to claim 12, further comprising:

a timer for maintaining current time; and

a power controlling means for controlling the power supplied to said tuning means, said decoding means, and said position identifying means according to the current time of said timer.

14. The local-area information receiver according to claim 13, in which the power is periodically supplied according to whether

or not the current time of said timer falls within the periodic time zones.

15. The local-area information receiver according to claim 13, in which the power is controlled according to whether or not the current time of said timer falls within the predetermined time zones.

16. The local-area information receiver according to claim 12, in which said storing means stores local-area information in different storage spaces according to whether or not it is information about a particular local area that is specified by a user.

17. The local-area information receiver according to claim 12, further comprising:

a band memorizing means for memorizing the frequency bands of all local areas that are used for transmission of local-area information; and

a band varying means for retrieving the frequency band allocated to a location detected by said position identifying means out of said band memorizing means, which varies the tuning band of said tuning means to the retrieved frequency band.

FIG. 1

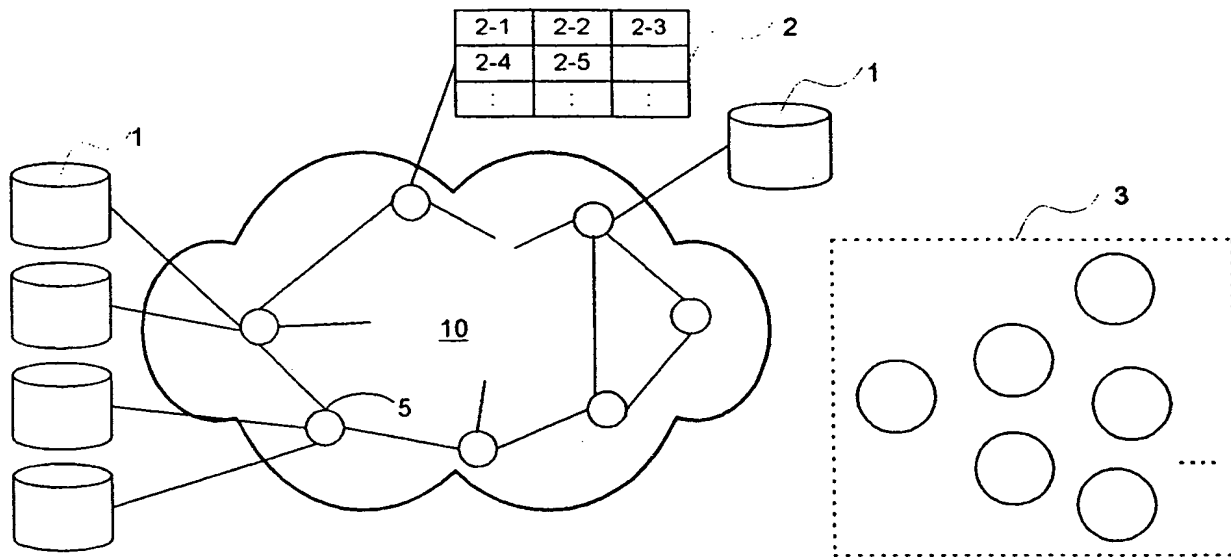


FIG. 2

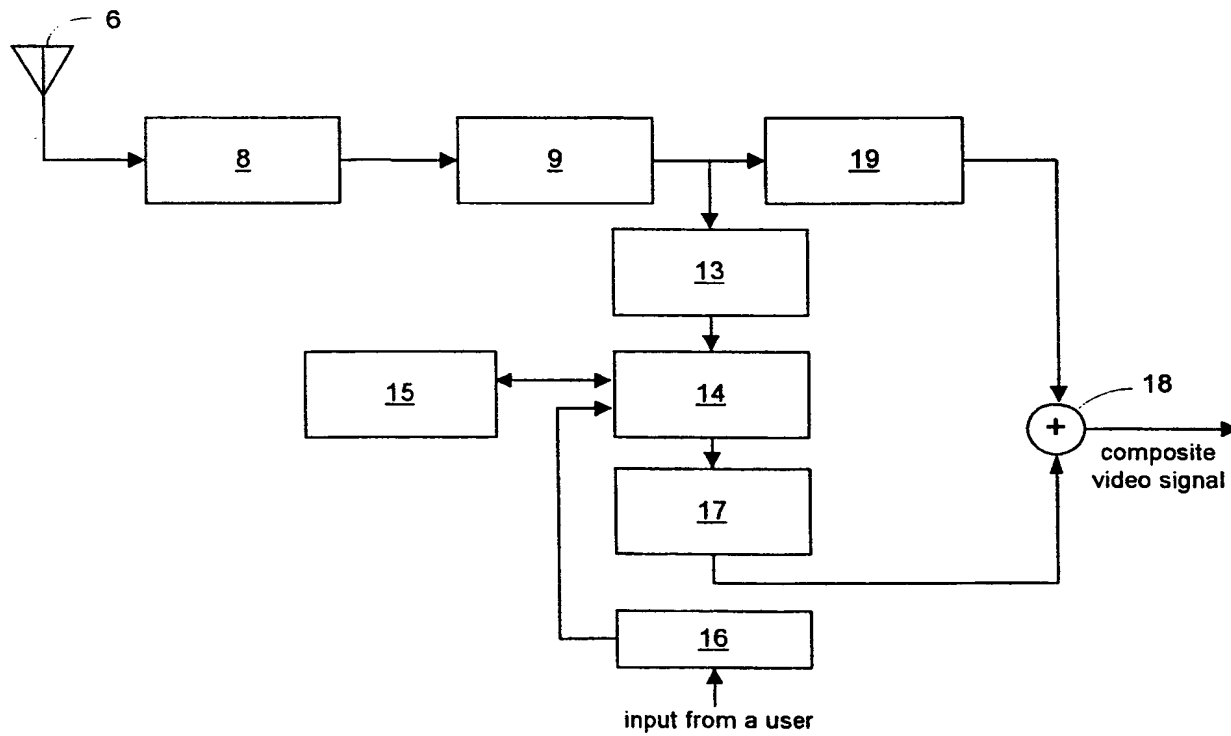


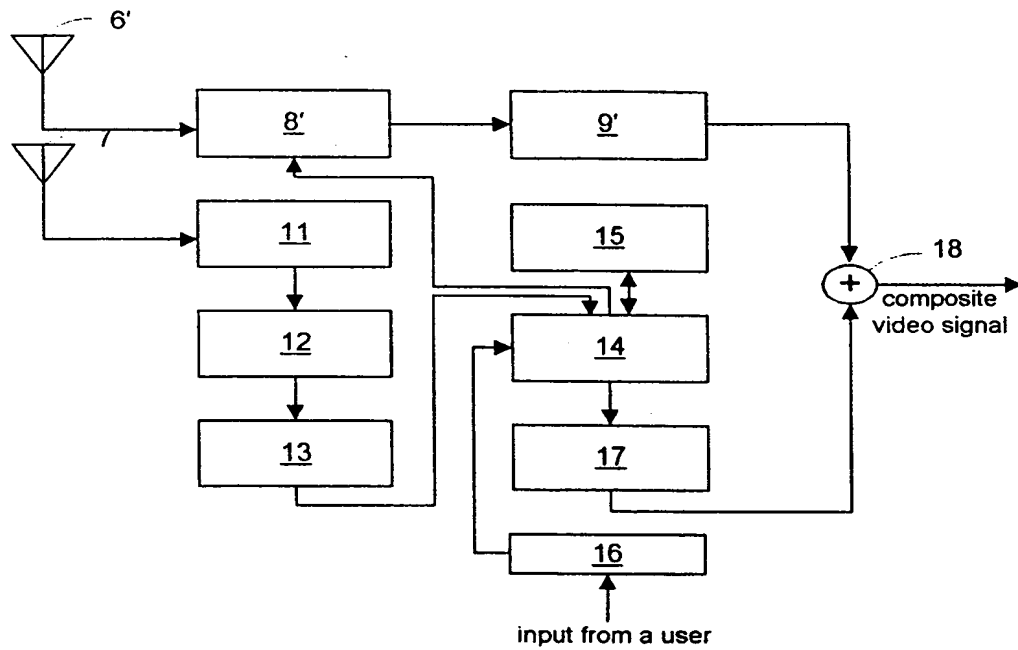
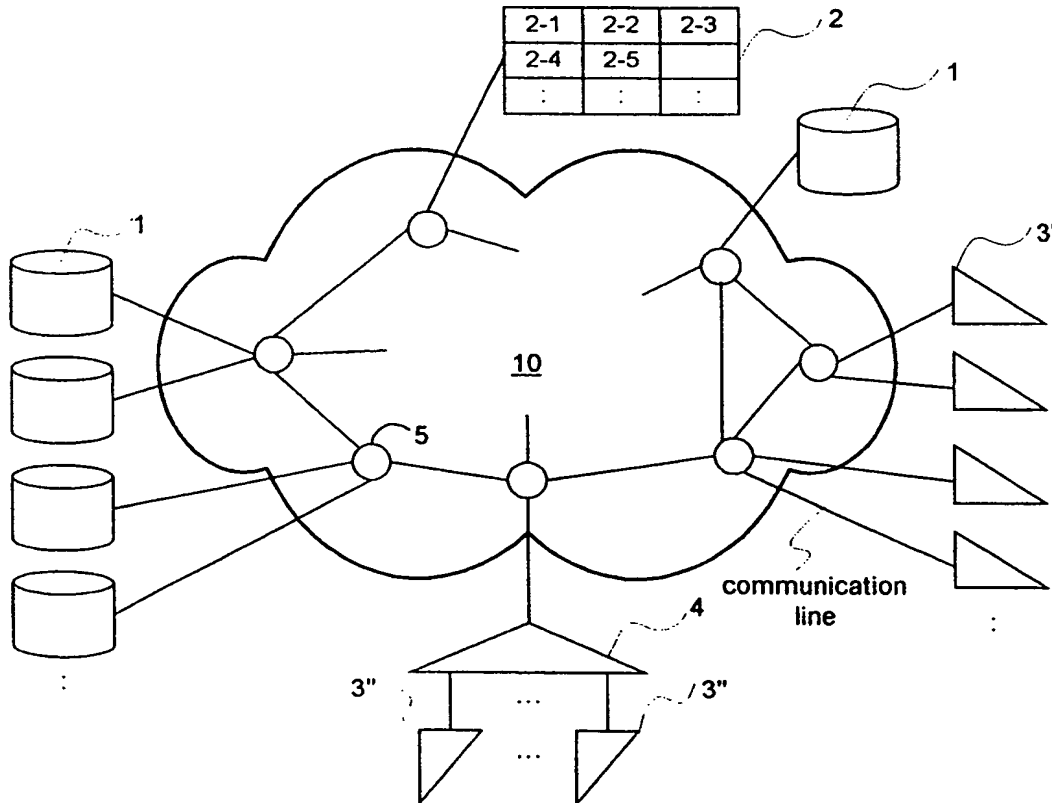
FIG. 3**FIG. 4**

FIG. 5

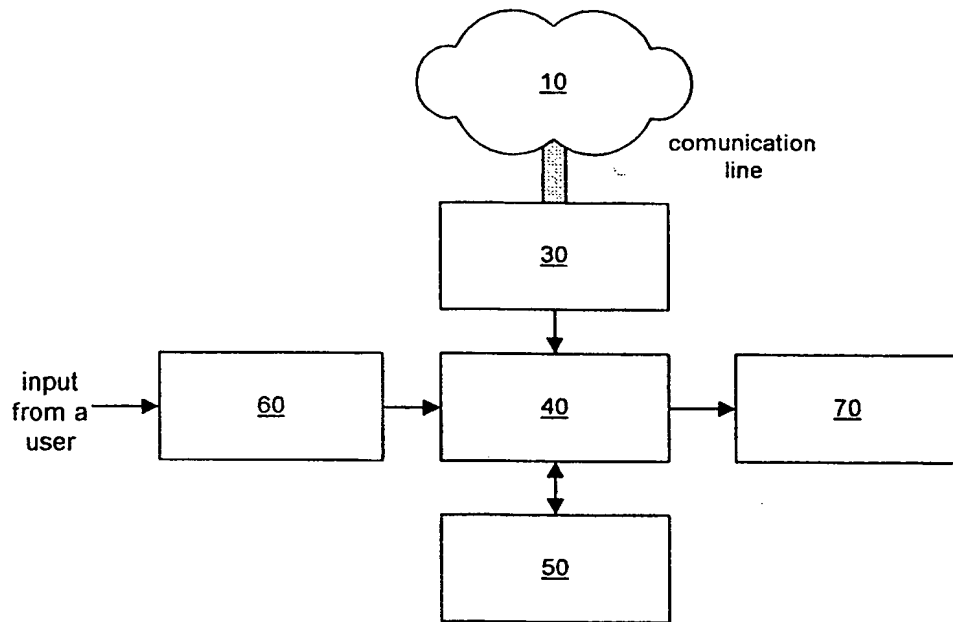


FIG. 6

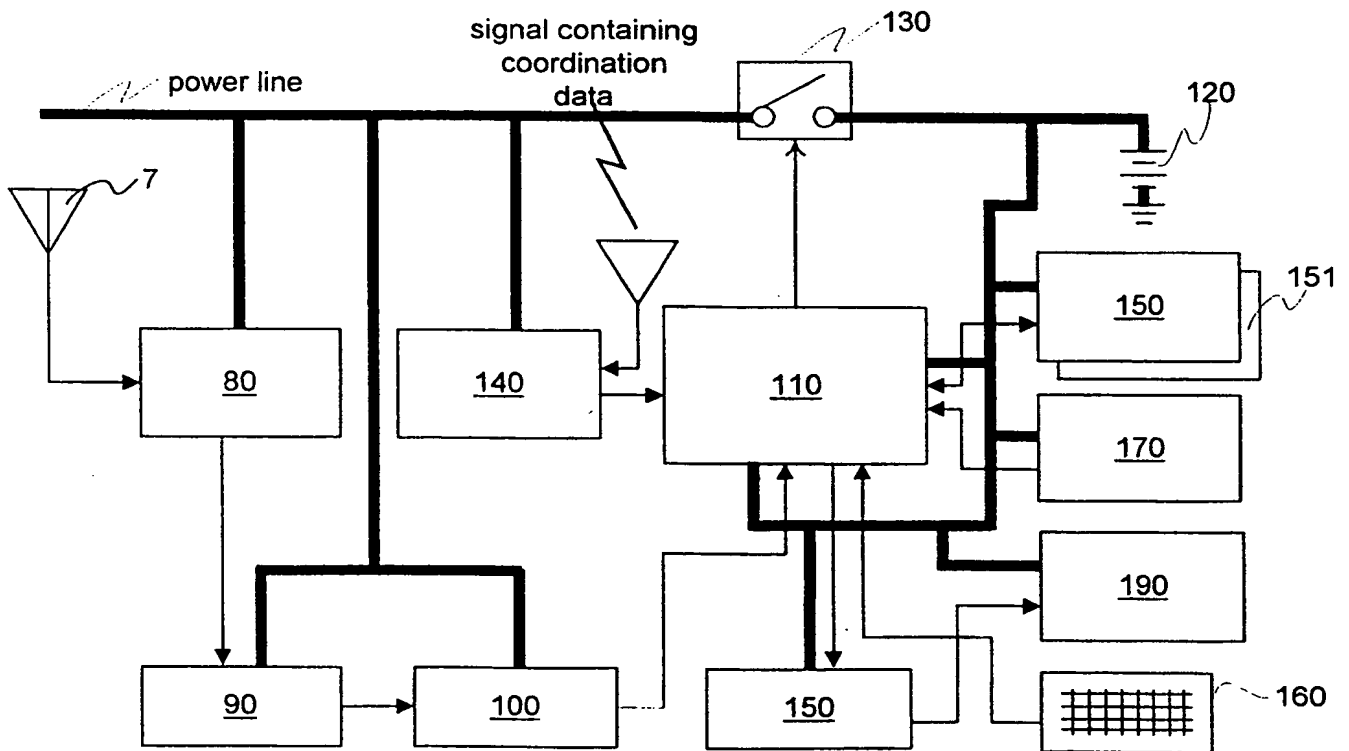


FIG. 7

	district	smaller district	area code (zip-code)
S E O U L	Kwangjin-Gu		143000
		Kuui-Dong	143200
		Kunja-Dong	143150
		:	:
	Kangnam-Gu		135000
		Kaepo-Dong	135240
		Nonhyun-Dong	135010
		:	:
	:	:	:
P U S A N	Kangseo-Gu		618000
		Karak-Dong	618310
		Noksan-Dong	618210
		:	:
	Nam-Gu		608000
		Daeyeon-Dong	608020
		YongHo-Dong	608090
:	:	:	:

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 97/00271

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶: H 04 B 7/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶: G 06 F; H 04 B; H 04 L; H 04 M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPIL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Patent Abstracts of Japan, 02 April 1996 (02.04.96), Nr. 08088686 A (HITACHI), abstract.	1,6,9,12
A	EP 0 201 063 A2 (COMPUTER X., INC.) 12 November 1986 (12.11.86), abstract; page 1, line 5 - page 5, line 30; fig.1,2; claims 1,3,5,7,9,11,13,15,17,19,20. -----	1,6,9,12

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 97/00271

Im Recherchenbericht angeführtes Patentedokument in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
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EP A2 201063	12-11-86	CA A1 1260619	26-09-89
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